

## **Distance Formula**

Given  $(x_1, y_1)$  and  $(x_2, y_2)$  you can find the distance between the two points by using the following Distance Formula:

$$\text{Distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

OR

$$\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

EX: Find the distance between

Ⓐ  $(3, -2)$  and  $(5, -1)$

$$d = \sqrt{(5 - 3)^2 + (-1 - -2)^2}$$

$$= \sqrt{(2)^2 + (1)^2}$$

$$= \sqrt{4 + 1}$$

$$= \sqrt{5}$$

②  $(2, -1)$  and  $(-4, 3)$

$$d = \sqrt{(2 - (-4))^2 + (-1 - 3)^2}$$

$$= \sqrt{(6)^2 + (-4)^2}$$

$$= \sqrt{36 + 16}$$

$$= \sqrt{52}$$

$$= 2\sqrt{13}$$

$$\begin{array}{c} 52 \\ \wedge \\ 26 \cdot 2 \\ \wedge \\ 13 \cdot 2 \\ \hline \sqrt{2 \cdot 2 \cdot 13} \end{array}$$

